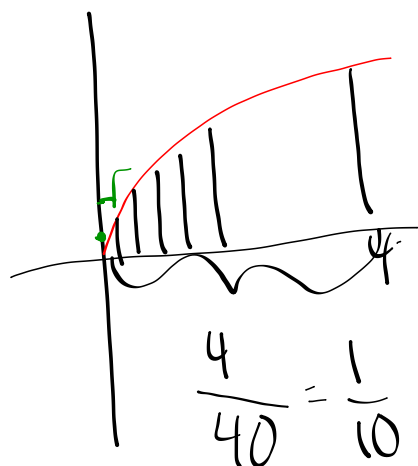


5.2/43) Estimate \sqrt{x} area stuff
from 0 to 4 using 40 rectangles

day 69
Fri the 13th



LHS $\approx 5.22 \dots$

$$A \approx \frac{1}{10} f(0) + \frac{1}{10} f(0 + \frac{1}{10}) + \frac{1}{10} f(0 + 2\frac{1}{10}) + \frac{1}{10} f(0 + 3\frac{1}{10}) + \dots$$

seq (pattern, variable, start, end)
 $\sqrt{\frac{0}{10}}, \sqrt{\frac{1}{10}}, \dots$

height: $f(\frac{0}{10}), f(\frac{1}{10}), f(\frac{2}{10}), \dots, f(\frac{39}{10})$

width: $\frac{1}{10}$

sum(sequence)

RHS $\approx 5.42 \dots$

$$\sum_{k=1}^{40} \frac{1}{10} f(\frac{k}{10})$$

5.2/43 continued

day 69
Fri the 13th

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C$$

actual area = $\int_0^4 \sqrt{x} dx$

$$= \left(\frac{2}{3} x^{3/2} \right) \Big|_0^4$$

$$= \frac{2}{3} (\sqrt{4})^3 - 0 = \frac{16}{3}$$

$$\begin{aligned} \int x^{1/2} dx &= \frac{x^{3/2}}{3/2} + C \\ &= \frac{2}{3} x^{3/2} + C \end{aligned}$$

fnInt (func, variable, start, end)
MATH+9